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JOURNAL OF INFORMETRICS: A BIBLIOMETRIC STUDY

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ABSTRACT

The paper presents a bibliometric study of the “Journal of Informetrics”. It publishes four issues per year. The data were downloaded from the journal’s website. The bibliometric analysis has been conducted with 404 contributions published in the journal selected five years for a period between 2016-2020. The study focuses on necessary bibliometric analysis forms, authorship pattern analysis, year wise distribution of articles, issue wise distribution of articles, single and multi authored papers. Findings of the studies pointed towards the advantages and weakness of the journal which are helpful for its further development. The study revealed that that the maximum number of articles i.e 85 (21.04%) were published in the year 2018. The highest number 339 (83.91%) articles were contributed by joint authors and the rest of 65 (16.09%) articles contributed by single author.

Keyword: Journal of Informetrics, Authorship pattern, Bibliometrics, Publication Analysis

1. INTRODUCTION

Bibliometrics is a set of techniques devoted to the quantitative analysis of scientific and technical activities. The subject of bibliometrics was first defined by Pritchard (1996) as “the application of mathematical and statistical methods to books and other media”. It involves the analysis of a set of publications characterized by bibliographic variables such as the author(s), the place of publication, the associated subject keywords, and the citations. Bibliometrics employs quantitative analysis to measure patterns of scientific publication and citation, typically focusing on journal papers. It is used to measure scientific collaboration, assess interdisciplinary research and look for quality and excellence in research. Bibliometric analyzes are quantitative studies of publications and publication patterns. All significant compilations of science indicators heavily rely on publication and citation statistics and other, more sophisticated bibliometric techniques. The aim of bibliometric studies was to measure national research performance in the international context or to describe the development of a science field with the help of bibliometric means. Today, bibliometrics is one of the rare truly interdisciplinary research fields extended to almost all scientific fields. Bibliometric methodology comprises from mathematics, social sciences, natural sciences, engineering and even life sciences.

JOURNAL OF INFORMETRICS

Journal of Informetrics (JOI) publishes rigorous high quality research on quantitative aspects of information science. The main focus of this journal is on topics in bibliometrics, scientometrics, webometrics, patentometrics, altmetrics and research evaluation. Contributions studying infometric problems using methods from other quantitative fields such as mathematics, statistics, computer science, economics and econometrics and network science are specially encouraged. JOI publishes both theoretical and empirical work. In general case studies, for instance a bibliometric analysis focusing on a specific research field or a country, are not considered suitable for publication in JOI, unless they contain innovative methodological elements.

JOI is a closed access quarterly peer reviewed academic journal. It was established in 2007 by Leo Egghe. The journal is published by Elsevier.

2. LITERATURE REVIEW

Verma, M. K., Devi, K. K. & Brahma, K. conducted a bibliometric study of the DESIDOC Journal of Library & Information Technology (DJLIT) for the period of 12 years (2005-2016) in which 553 articles were published. The study examined the various bibliometric parameters such as authorship pattern of articles & references, geographical distribution, major contributions from prolific author, state wise contribution of articles and number of references. The study revealed that India contributed highest publications with 88.95%. The Authorship Pattern of Articles for the study period was contributed maximum by two authors with 41.41%, followed by Single author with 36.88% and three authors with 15.18%. B.M. Gupta from India contributed the highest number of articles with 17.98%, followed by Chennupati K. Ramaiah (9.35%) and S.M. Dhawan (7.19%). New Delhi (23.44%) emerged at top most position with maximum number of contributions, which is followed by Karnataka (12.75%) and Maharashtra (10.86%). More than 63.11% articles published in the DJLIT were on co-authorship pattern.

Juan José Prieto-Gutiérrez & Francisco Segado-Boj conducted a thorough bibliometric analysis of research published in *Annals of Library and Information Studies (ALIS)*, an India-based journal, for the period 2011–2017. Specifically, it compares this journal's trends with those of other library and information science (LIS) journals from the same geographical area (India, and Asia as a whole) and with the 10 highest-rated LIS journals worldwide. The source of the data used was the multidisciplinary database Scopus. To perform this comparison, ALIS' production was analyzed in order to identify authorship patterns; for example, authors' countries of residence, co-authorship trends, and collaboration networks. Research topics were identified through keyword analysis, while performance was measured by examining the number of citations articles received. This study provides substantial information. The research lines detected through examining the keywords in ALIS articles were determined to be similar to those for the top LIS journals in both Asia and worldwide. Specifically, ALIS authors are focusing on metrics, bibliometrics, and social networking, which follows global trends. Notably, however, collaboration among Asia-based journals was found to be lower than that in the top-indexed journals in the LIS field, showing lesser internationalization. The results obtained present a roadmap for expanding the research in this field.

Garg & Bebi conducted a citation study of a number of articles published in *Annals of Library and Information Studies* (ALIS) and *DESIDOC Journal of Journal of Library and Information Technology* (DJLIT) from the period 2010-2013 and found that the average number of articles published in DJLIT are more than the articles published in ALIS during the period of study, for this reason DJLIT is published six times in a year, while ALIS is published four times in a year. It was also found that DJLIT 10 received more citations and published more papers than ALIS, citations per paper for both the journals are almost equal, DJLIT has a better immediacy index than ALIS and the impact factor of both the journals was less than one in 2012, but it increased in 2013 and was more than one.

Pradhan and Kumar, et al. conducted a citation analysis of library and information science (LIS) scholarly publication in International LIS Journals and examine the authorship pattern, collaborative nature, research distribution, etc. The researcher 13, 14 has taken citations from SCOPUS, Current Awareness Abstract Library and Information Management and Emerald management Review databases during the period 2001 to 2010. The findings revealed that 84.13% literatures are contributed in the form of journal articles, more than half literatures are contributed by collaborative Indian authors, out of 41 journals having 353 LIS literatures, only seven journals cross more than 10 literatures each of which shows only few set of core journals where majority of LIS literatures are published, Delhi, found to be of central place has increased the growth of LIS research in India, having 24.08% publications.

Verma, Yadav and Singh (2018) conducted a bibliometric study of Library Philosophy and Practice (e-journal) from 2008 to 2017. A total of 1478 scholarly papers were published. It is found that the average growth rate of paper was 147.8 per year. The highest number of publications is in the year 2011 with 197(13.33%) followed by 2017 with 193(13.06%). Majority of papers during 2008-2017 in LPP are in the form of joint authorship, and 41.13% of articles are published in two authorship. From the 35 countries of the world contributed their articles in LPP during 2008-2017. With 42.23% contributions, Nigeria is in top rank while India (24.13%) and USA (9.52%) contribution stood second and third respectively. There are a total of 34907 references cited in 1478 articles from 2008-2017, and highest number of references (5619) has recorded in the year 2017.

Thanuskodi in his study deals with bibliometric analysis of articles and references provided at the end of each article contributed in Indian Journal of Chemistry from 2005-2009. The analysis cover mainly the number of articles, authorship pattern, forms of document cited, etc. All the studies point towards the merit and weakness of the journal which will be helpful for its further development. This study showed that most of the contributions are India. The authorship pattern of the articles published during the period of study. Maximum number of articles were contributed by two authors. This study also showed that majority of the contributors preferred journals as the source of information which occupied the top position. All the studies point towards the merits and weakness of the journal which will be helpful for its further development.

Thanuskodi (2010) discussed the research output performance of social scientists on social science subjects. The analysis cover mainly the number of articles, authorship pattern, subject wise distribution of articles, average number of references per articles, forms of documents cited, year wise distribution of cited journals etc.

3. **OBJECTIVES:** The objectives of the study are:

- To make an analysis of articles published in Journal of Informetrics from 2016 to 2020.
- To Observe the authorship pattern of articles for a period of study.
- Quantify the issue wise distribution of articles.
- To study the period and volume wise authorship pattern
- To scrutinize the single and joint authored papers of the journal.
- To find out the degree of collaboration.

4.**SCOPE AND METHODOLOGY**

The present study covers the articles published in Journal of Informetrics from 2016 to 2020. The data have been downloaded from the journal website. The results were tabulated and analyzed to meet the objectives mentioned above. A total of 404 articles were retrieved from 20 issues of 5

volumes of the journal covering the period of 2016-2020. These data were organized, calculated, tabulated, analyzed and presented using simple arithmetic and statistical methods for its results.

5.SIGNIFICANCE OF THE STUDY

To conduct a bibliometric study on the open access journals is important as e-journals in the contemporary information technology era is very much significant in itself. The study on these journals helps the researchers, librarians in their relevant research works, collection planning and building. The readers will also procure various information through this study which in turn will benefit the journals in gaining reputation and identification. The study focuses on necessary bibliometric analysis forms, authorship pattern analysis, year wise distribution of articles, issue wise distribution of articles.

6.DATA ANALYSIS

6.1 Table 1: Year wise Distribution of Articles

Year	Vol.	No. Of Issues	No. Of Contribution	Percentage
2016	10	4	82	20.31
2017	11	4	83	20.54
2018	12	4	85	21.04
2019	13	4	75	18.56
2020	14	4	79	19.55
Total		20	404	100

Table 1 shows that the maximum number of articles were published in the year 2018 (85) and minimum in the year 2019 (75) articles. The journal publishes on an average of 80 articles per year.

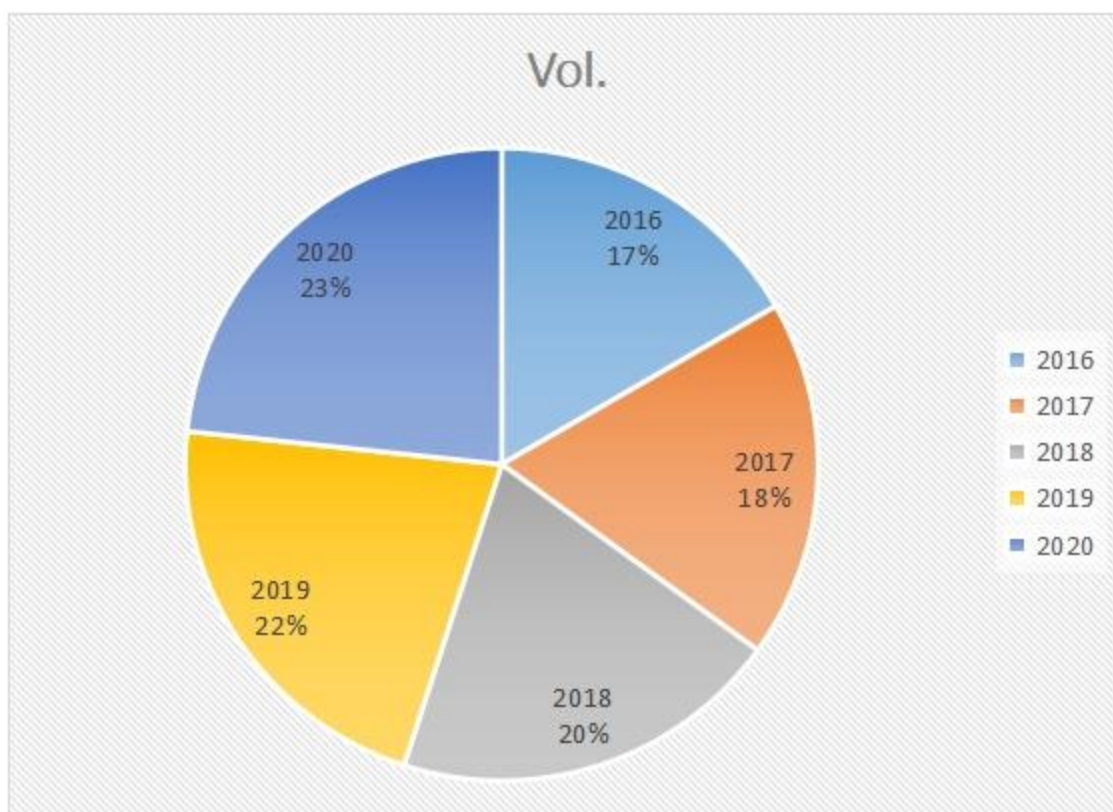


Figure 1: Year wise Distribution of Articles

6.2 Table 2: Distribution of Articles (Issue Wise)

Distribution of Articles (Issue Wise)					
Volume	Issue 1	Issue 2	Issue 3	Issue 4	Total Publications
10	25	20	14	23	82
11	22	22	20	19	83
12	26	11	27	21	85
13	30	23	10	12	75
14	16	18	20	25	74
Total	119	94	91	100	404

The table 2 reveals distribution of articles (Issue-wise). Volume 12 shows the highest number of total articles (85) followed by Volume 11 with 83 articles. It is followed by volume 10 with 82 articles. The lowest number of total articles 74 is in volume 14.

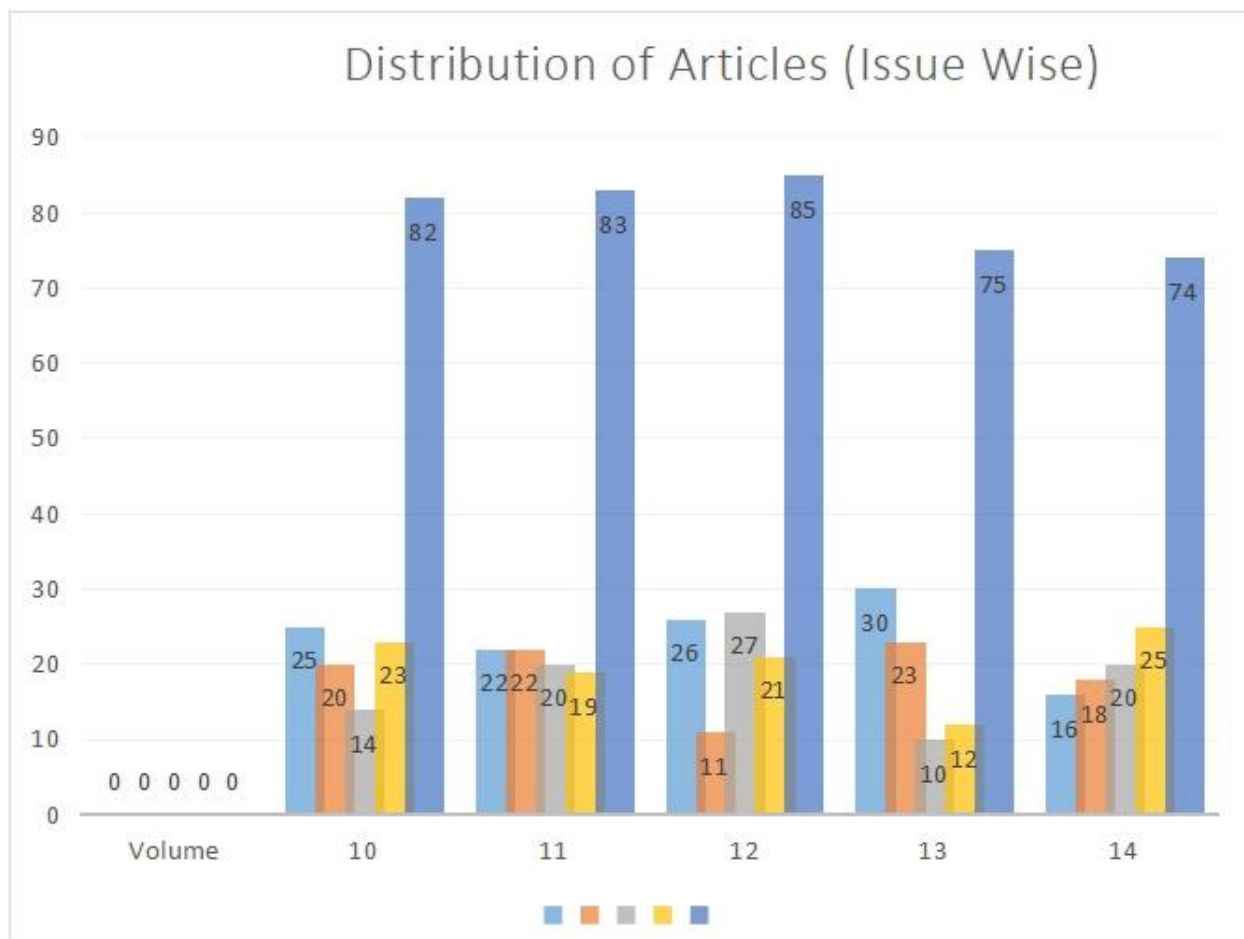


Figure 2: Distribution of Articles (Issue Wise)

6.3 Table 3: Authorship Pattern

Year	Number of Authors				Total
	Single Author	Two Authors	Three Authors	Four Authors & more	
2016	17	23	19	23	82
2017	14	22	24	23	83

2018	17	26	22	20	85
2019	8	17	26	24	75
2020	9	21	20	29	79
Total	65	109	111	119	404

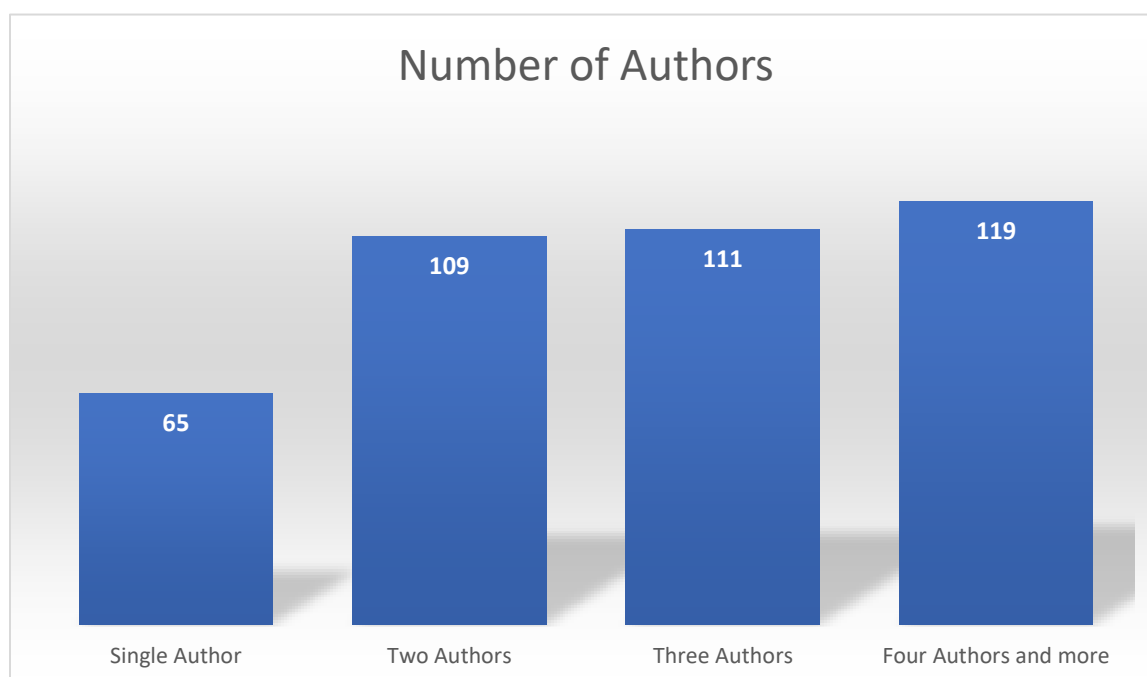


Figure 3: Authorship Pattern

Table 3 reveals the authorship pattern of the articles published during the period of study. Maximum number of articles were contributed by four authors and more with 119 articles (29.45%). This is followed by three authors with 111 (27.47%) articles, two authors with 109 (26.99%) and single author with 65 (16.09%) of the total articles.

6.4 Table 4: Year-wise Authorship pattern

Authorship	Year					Total	Percentage
	2016	2017	2018	2019	2020		
Single	17	14	17	8	9	65	16.09
Joint	65	69	68	67	70	339	83.91
Total	72	83	85	75	79	404	100

The above table-4 showed that out of 404 articles joint authors contributed 339 (83.91%) articles while the rest 65 (16.09%) articles were contributed by single author.

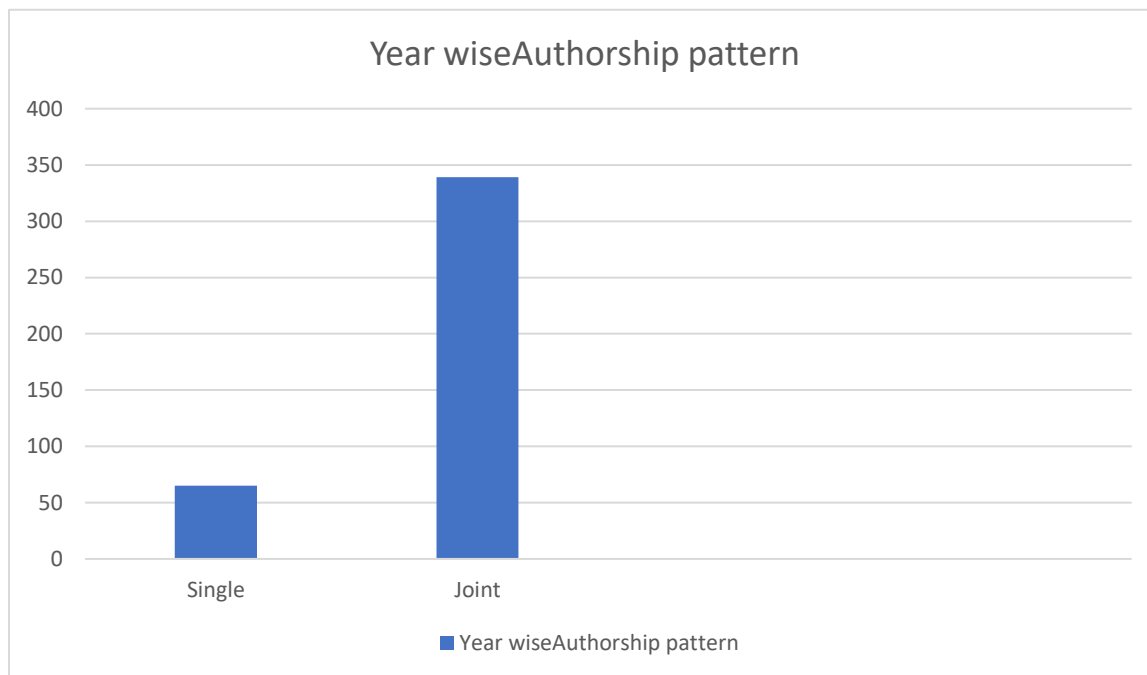


Figure 4: Year-wise Authorship Pattern

6.5 Table 5: Issue Wise Article Distribution Pattern of Authors

Author Type	Distribution Issue Wise				Total Articles (%age)
	Issue 1	Issue 2	Issue 3	Issue 4	
Single	14	20	13	18	119 (29.45%)
Two	39	26	20	24	94 (23.27%)
Three	13	20	33	25	91 (22.54%)
Four & more	18	24	27	31	100 (24.74%)
Total	65	109	111	119	404 (100%)

Table 5 reveals the article distribution pattern of authors (Issue wise). The table clearly shows that out of 404 articles, the highest 119 are four authored and more, followed by three authored with 111 articles.

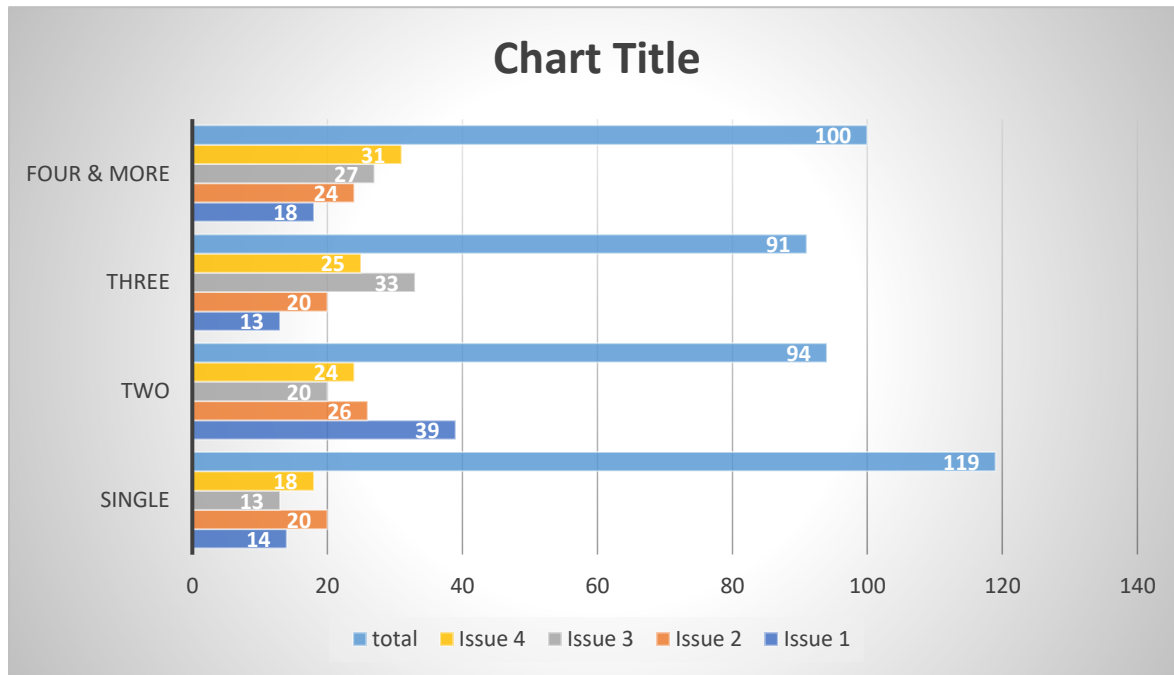


Figure 6: Issue Wise Article Distribution Pattern of Authors

6.6 Degree of Collaboration

Table-6. The degree of collaboration ranges from 0.79 to 0.89 and the average degree of collaboration is 0.83. The degree of collaboration is calculated by using the following formula.

$$C = \frac{N_m}{N_m + N_s}$$

C is the degree of collaboration in a discipline. N_m is the number of multi-authored research papers in the discipline published during a year. N_s is the number of single authored research papers in the discipline published during a year.

Table:6 Degree of collaboration

Year	No. Of Authors				Degree of collaboration
	Volume	Single	Multiple	Total	
2016	10	17	65	72	0.79
2017	11	14	69	83	0.83
2018	12	17	68	85	0.80
2019	13	8	67	75	0.89
2020	14	9	70	79	0.88
Total		65	339	404	0.83
Percentage		16.09	83.91	100.00	

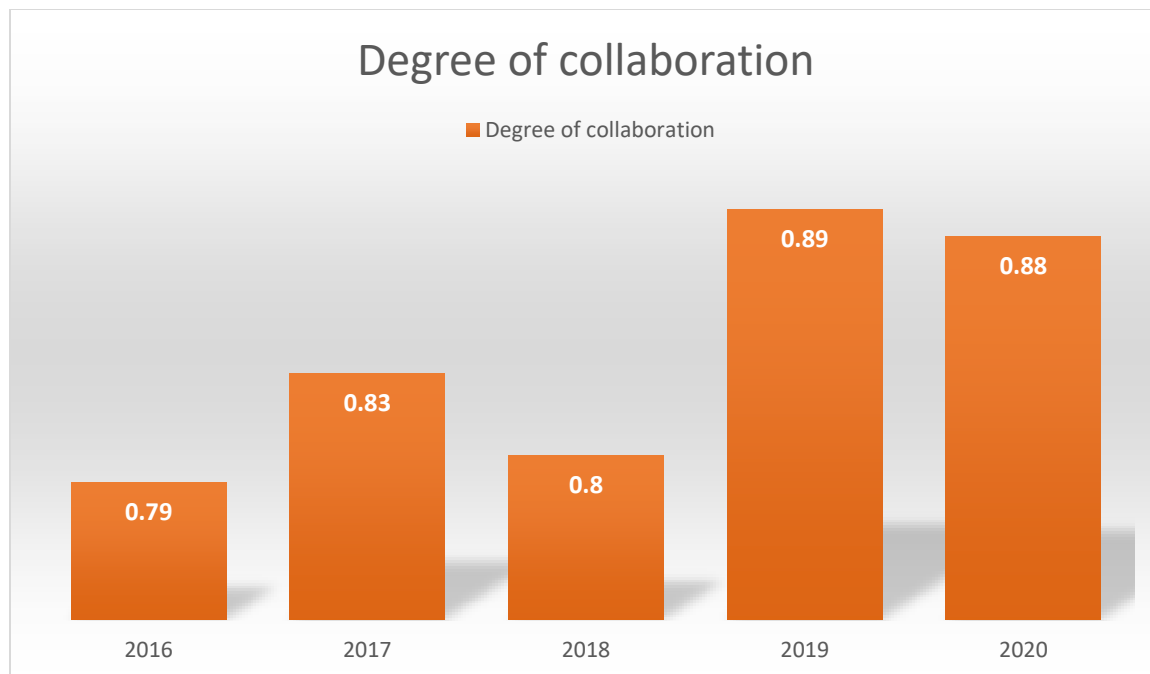


Figure 6: Degree of collaboration

As a result, it was found that the degree of collaboration in the Journal of Informetrics is 0.83.

7. FINDINGS

The major findings from the present study are:

1. The maximum number of articles were published in the year 2018 (85) and minimum in the year 2019 (75) articles. The journal publishes on an average of 80 articles per year. Most of the publication are in issues 3 and 4 with numbers 140 and 123 respectively. The lowest are in issues 7,10 and 12.
2. Volume 12 shows the highest number of total articles (85) followed by Volume 11 with 83 articles. It is followed by volume 10 with 82 articles. The lowest number of total articles 74 is in volume 14.
3. Maximum number of articles were contributed by four authors and more with 119 articles (29.45%). This is followed by three authors with 111 (27.47%) articles, two authors with 109 (26.99%) and single author with 65 (16.09%) of the total articles.

4. Out of 404 articles joint authors contributed 339 (83.91%) articles while the rest 65 (16.09%) articles were contributed by single author.
5. Out of 404 articles, the highest 119 are four authored and more, followed by three authored with 111 articles.
6. The degree of collaboration in the Journal of Informetrics is 0.83.

7. CONCLUSION

The acceptance of bibliometric techniques worldwide in different disciplines made tremendous growth of literature and its subsequent areas. The technique is favorable for a number of purposes which includes selection of journals for the libraries, showing the benefits of a desired field, scientific output evaluation, determining scientific indicators. The cost barrier is reduced by the open access mode which helps in accessing various scholarly articles by the global users.

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